Enterprise Solutions Success Stories and Lessons Learned

Enterprise Solutions Module 4

Tuesday, May 9

Learning Objectives

- Understand the current state and trends of the ERP Market
- Understand changing technology for Enterprise Solutions
  - Service-Oriented Architecture
  - Oracle Fusion
  - SAP NetWeaver
- Provide Success Stories and Lessons Learned for Public and Private Sector ERP implementations
- Open discussion of DoD and Army strategies for ERP implementations

Agenda

Trends in ERP Market	Mr. Adolph Allesch
Changing Technology	Mr. Larry Wright
SAP and Oracle Strategies	Dr. Ray Sommer
Success Stories & Lessons Learned	Mr. Adolph Allesch
Break	20 min
Success Stories & Lessons Learned	Mr. Ron Rosenthal
DoD and Army ERP Implementations	Mr. Kevin Carroll
Discussion – Next Steps	Mr. Gary Winkler
Wrap up & Q&A	Mr. Chip Raymond

Trends in the ERP Market

Adolph Allesch- Capgemini

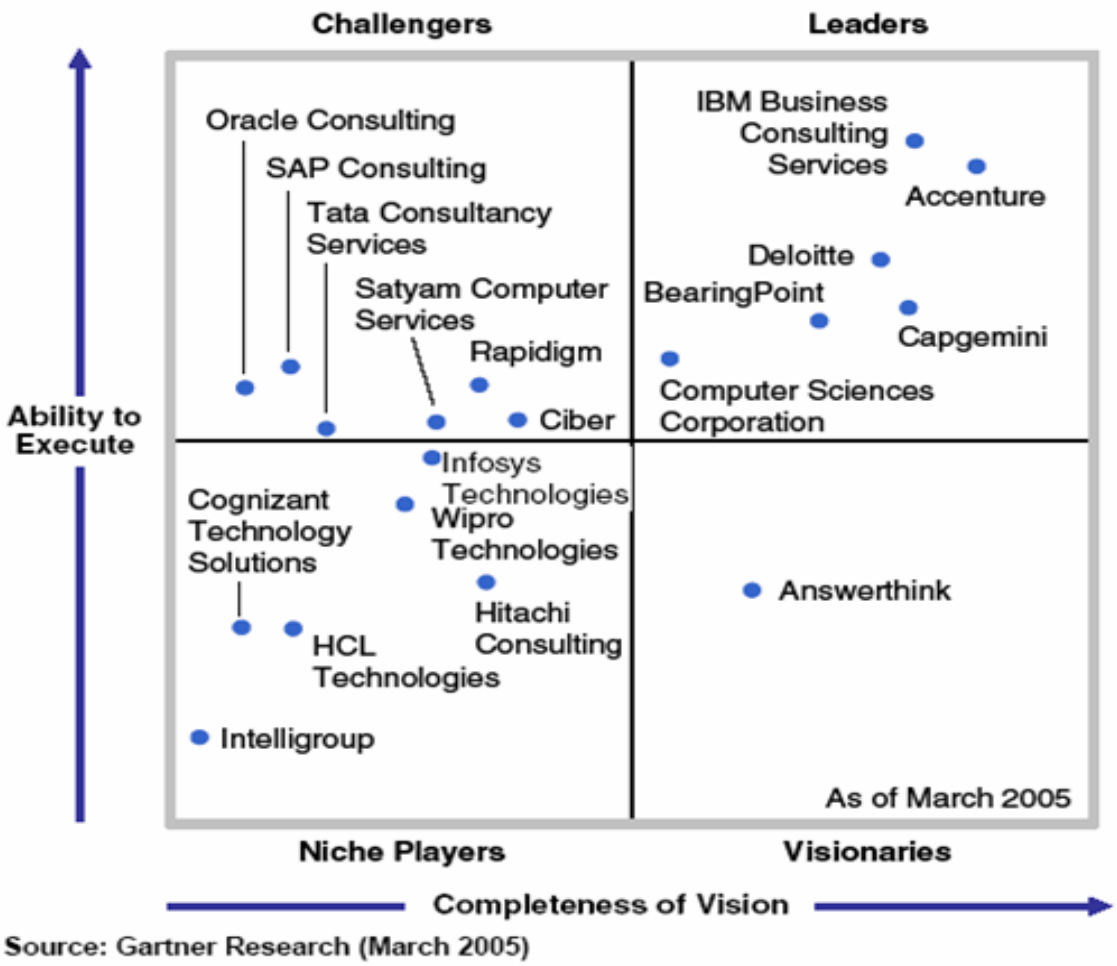
ERP Market Insights

- Top 2 players (SAP, Oracle) own more than 60% of the market
  - Oracle acquired PeopleSoft, JDEdwards & Seibel
- To sustain customer base, vendors are extending maintenance and support for older or acquired products
  - Market awaiting more information on Oracle's approach to integrate PeopleSoft and on SAP's direction with NetWeaver and Microsoft
- Architectural changes
  - ERP vendors are migrating towards a service-oriented architecture (SOA)
    - Oracle – Fusion (COMING)
    - SAP – NetWeaver (HERE)

ERP Vendors (by mkt share)

1) SAP
2) Oracle

ERP Service Providers

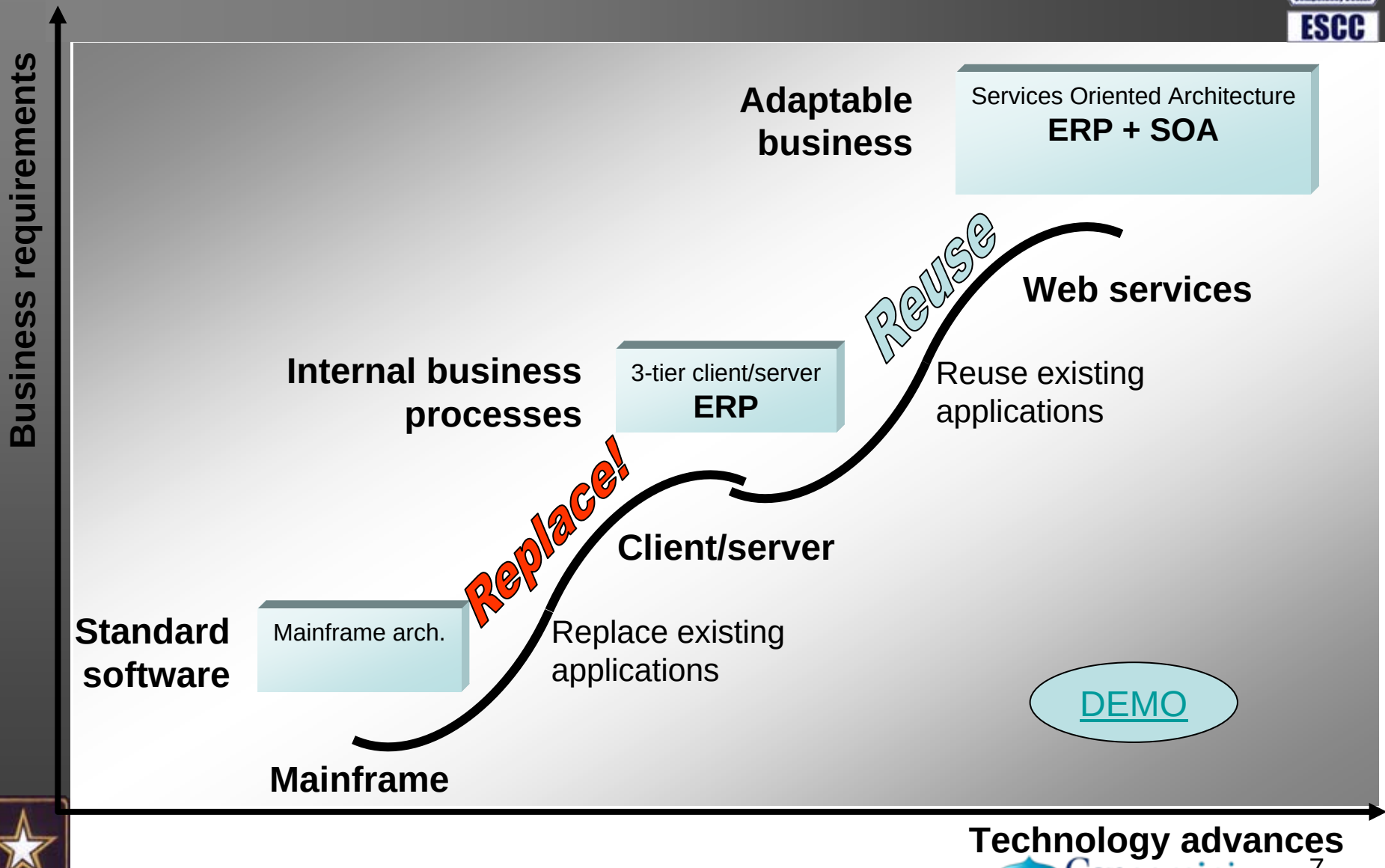


Source: Gartner Research (March 2005)

DoD
Enterprise Software Initiative
Blanket Purchase Agreement
(ESI BPA)
Systems Integrators

1) Accenture
2) BearingPoint
3) CSC
4) Deloitte
5) IBM

Next Bold Move in ERP



Business Process Renovation (bpR) and SOA

- Renovation Equation
  - ☐ bpR =
    - + SOA Functionality
    - + Application Architecture
    - + Holistic Governance
- Key Changes to ERP
  - ☐ Redefining Task Mgt
  - ☐ Extended Networks


SAP NetWeaver magazine

ADOLF ALLESCH

From BPR to ESA:
Business-Process Renovation

Remember business process reengineering (BPR) in the early 1990s? Dr. Michael Hammer, president of Hammer and Company, coined the phrase and the concepts that we all strove to implement. Among my clients BPR was widely adopted using standard workflows, custom software, manual steps, and organizational realignment. By the mid 1990s the ERP wave was in vogue and "package-enabled reengineering" emerged to redesign and standardize processes around a software package such as SAP R/3. In some cases, companies violated package limits during the redesign effort since packages of that era lacked deep (functional) or broad (industry) capabilities. The results were evident, since ownership and the ability to change or enhance business processes became costly and paybacks were in question. When the go-to-market strategy changed, ERP struggled to keep up.

In today's service-oriented architecture (SOA) world — or enterprise services architecture (ESA), as SAP calls it — the time to rethink business processes is now. The fundamental principle is the abstraction of business activities or events, modeled as enterprise services, from the actual functionality of the enterprise application. Aggregating these functions as Web services into business-level enterprise services provides more meaningful building blocks. Business applications based on these principles support reduced cost (by lowering TCO for existing IT solutions) and provide a platform for innovation.

The majority of R/3 installations are facing an upgrade to mySAP ERP or mySAP Business Suite, both powered by SAP NetWeaver. As you look at SAP's growth, you'll see a growing middle market and a new customer base for SAP that now takes for granted the monolithic ERP of yesterday. These new installations have benefited from the ERP evolution and now have a path to ESA where robust functionality and the ability to truly customize affordable business processes are becoming a reality. When the CFO wants to validate cost points and paybacks, an ESA solution can deliver. How did (or can) this happen?

Since the Internet bubble burst, I have seen two

Adolf Allesch is the vice president of SAP NetWeaver Solutions at Capgemini. A pioneer with the Web and an early adopter of mySAP.com, Allesch is now the SAP NetWeaver evangelist at Capgemini. He specializes in technology-enabled business transformation using SAP and is a frequent presenter at SAP events worldwide.

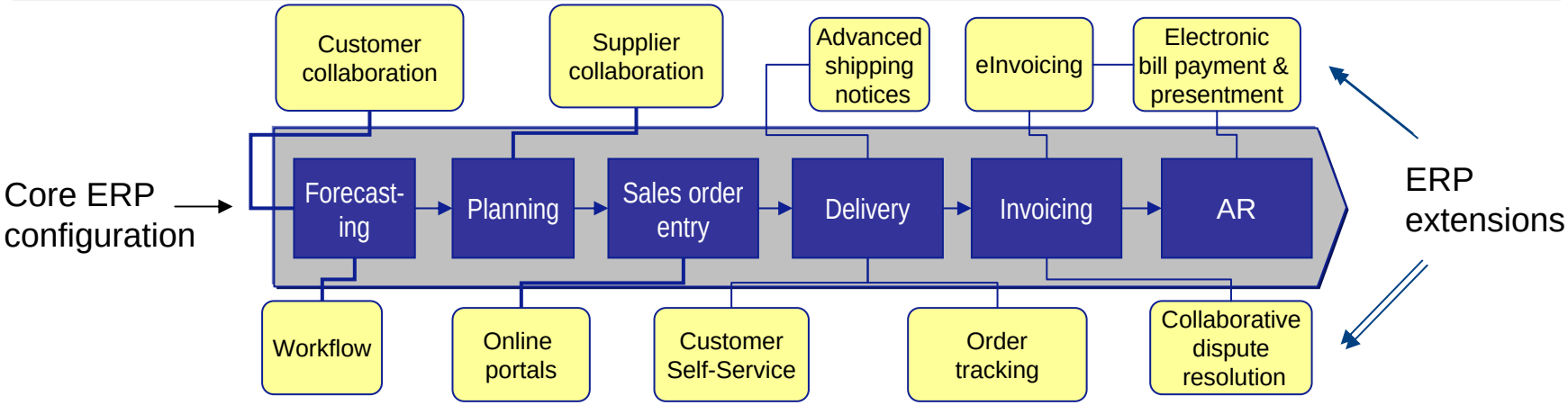
activities in the market that have culminated in very complex enterprise business processes. First, the Web has changed the way we work. For the last eight years or so, the Web has been "publisher-based," meaning someone creates content and the users "consume it." As a result, we have become trained to bookmark and visit numerous Web sites per day (supplier portals, intranet, and so on). In the past two years there has also been a change in this approach, specifically in the content we desire and the ways that we want to access it.

www.NetWeaver.SAPpub.com

Spring 2006 SAP NetWeaver Magazine 11

Implement Business Processes Holistically

SOA changes the way business processes are designed and implemented. If addressed correctly, the additional cost can be minimized

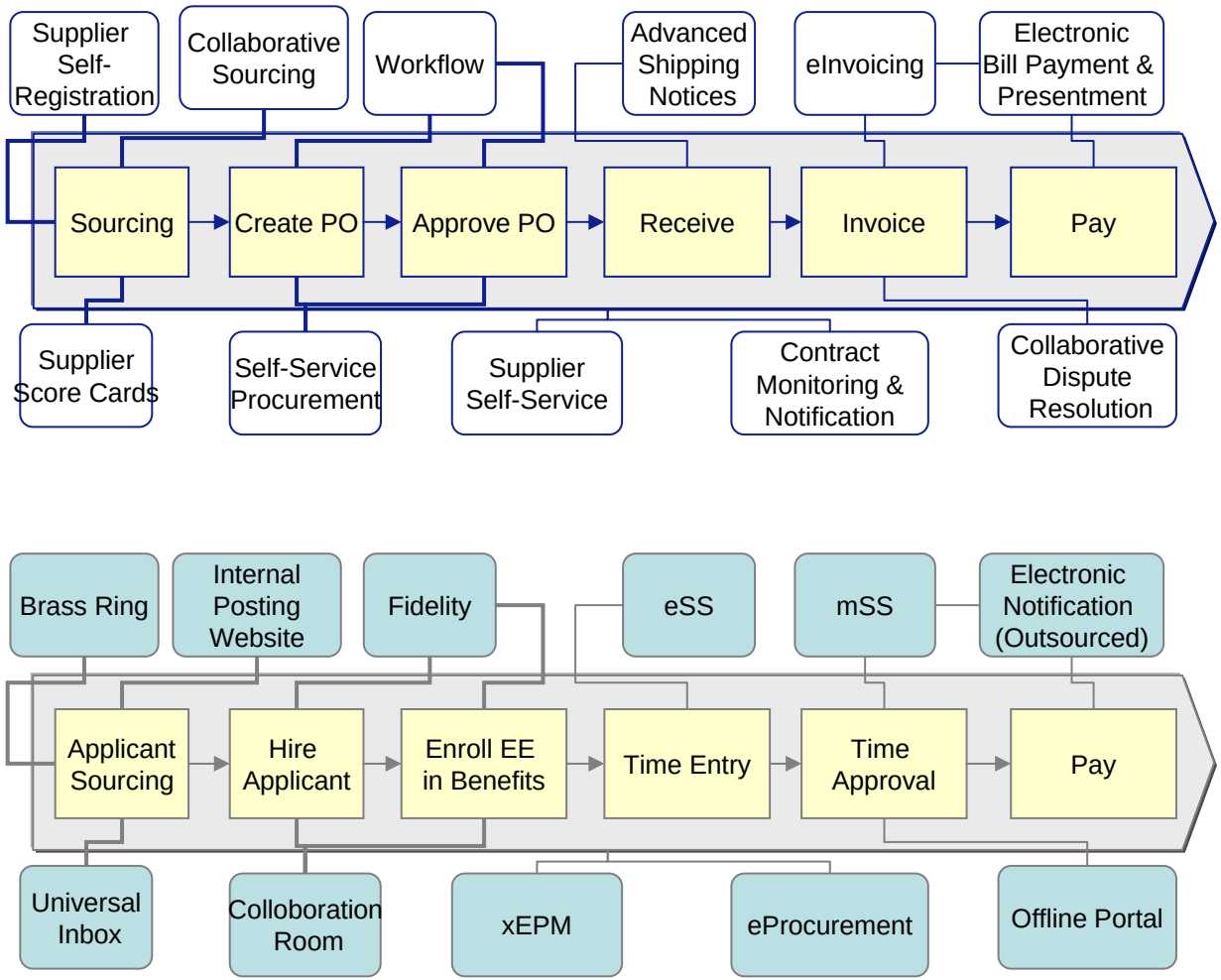


SOA enables all aspects of a business process to be implemented, not just what can be configured within the ERP application

Key benefits:

- High-quality, end-to-end business solution for both internal and external users
- Reduces errors, rework, and simplifies the monitoring and execution of financial processes
- Fully supports the collaborative and non-transactional aspects of the financial process
- Financial process navigation is independent of the underlying business applications
- Personalized solution. Users only see what is relevant to them

Modern ERP changes the way business processes are designed and deployed



Increase intimacy, interaction, and integration

- **Business process improvements/re-engineering**
- **Create a more collaborative, personal working relationship with customers, suppliers, business partners**
- **Increased level of self-service and collaboration**
- **Tighter, more cost-effective integration**

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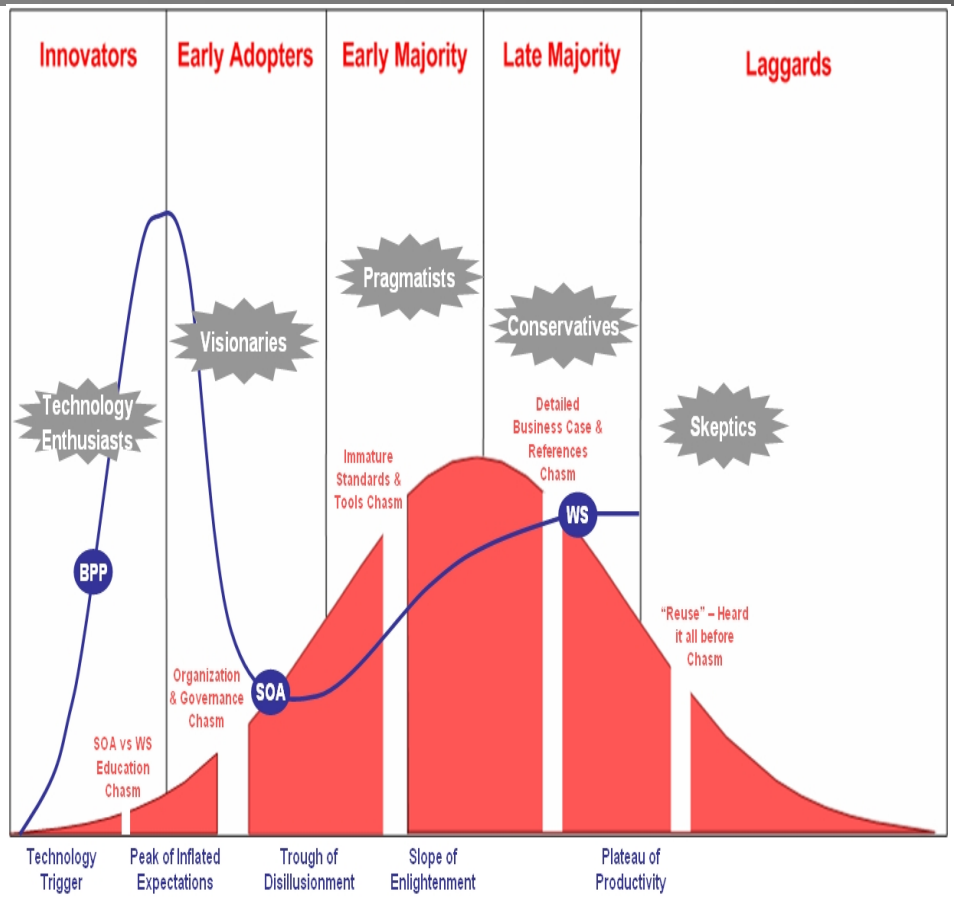
Service-Oriented Architecture

Larry Wright - Capgemini

The Evolution of SOA

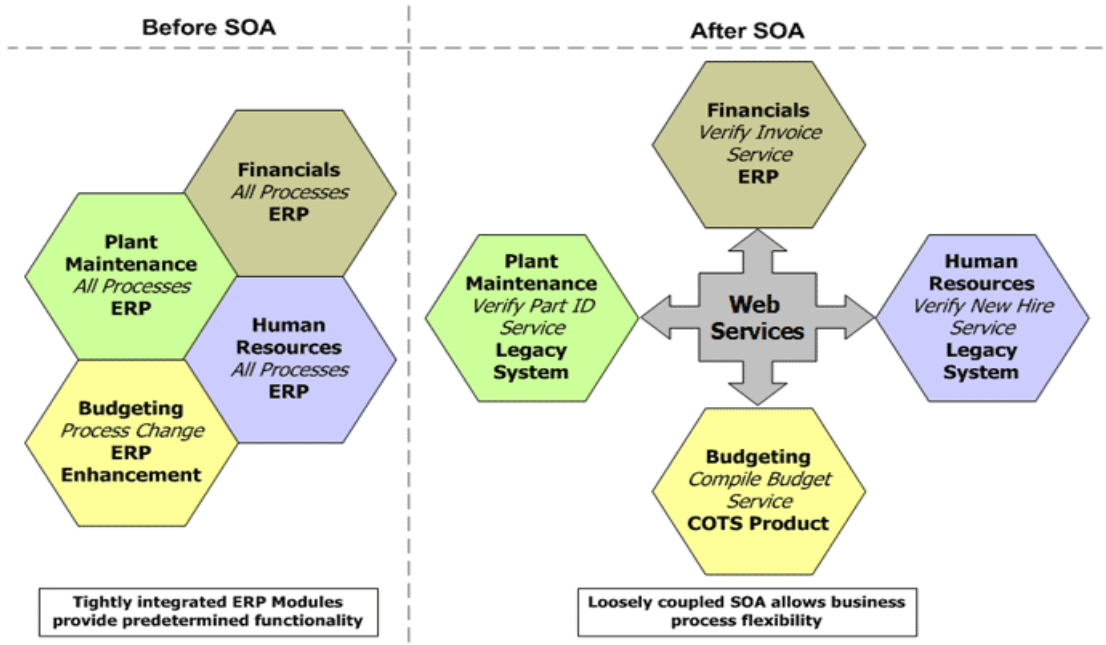


- The blue curve represents Gartner's "hype cycle" which graphically represents the maturity, adoption and business application of specific technologies/paradigms.
- In July 2005 Gartner stated that the use of web services is approaching the "Plateau of Productivity". This can be attributed to some key web services standards being published and being made available in a plethora of tools and products.
- Gartner states that SOA is approaching the "Trough of Disillusionment". Gartner thinks that SOA has been hyped beyond new technologies/paradigms.

SOA is a maturing paradigm which promises to allow more direct interoperability of business processes. Web services, a key enabler of SOA, has proven it's benefits in the market.

What is a Service-Oriented Architecture?

- A Service is based on a function-oriented (business process) view of an enterprise that is well-defined, self-contained, and doesn't depend on the context or state of other services.
  - A service consists of an interface and a service implementation component
    - The interface component facilitates interoperability
    - The implementation component produces results based on the application logic associated with the business process



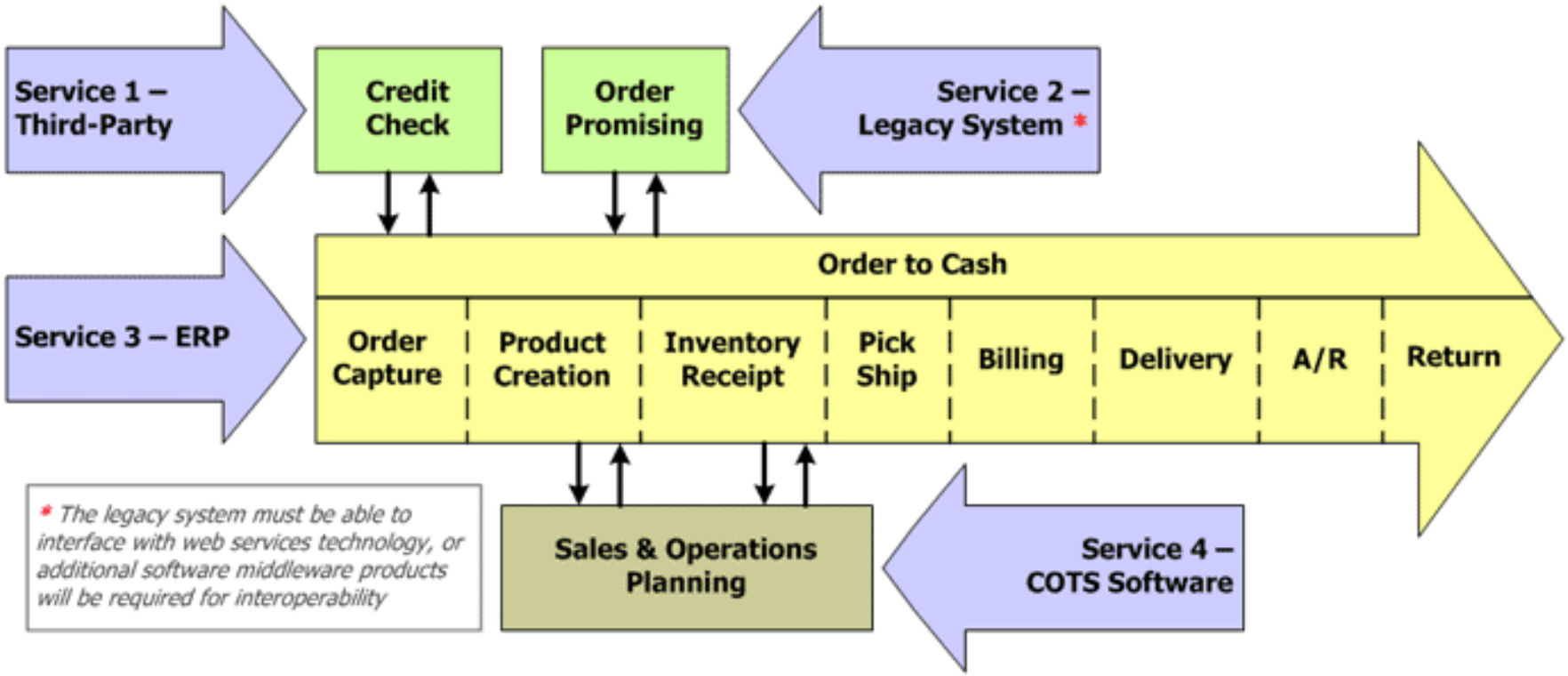
What is a Service-Oriented Architecture?

- A Service-Oriented Architecture (SOA) is:
  - A software design approach in which a software application requests one or more services from another software application which provides complementary services.
  - A collection of services that communicate via a high-level interoperability layer and are based upon existing and emerging Web Service standards.
  - Internal or external business processes that can be combined and recombined to support flexibility in business process execution.
  - Depending on the need, applications initiate a “service request” or respond to a “service request”.

- A Service-Oriented Architecture:
  - Enables business transformation by providing visibility of enterprise-level business processes
  - Forces IT executives to think in terms of business process execution
  - Helps emphasizes “code reuse” and thus enables a greater ROI
  - Minimizes the impact of changes to software code on other software components

Why Service-Oriented Architecture?

- Flexibility is the key benefit of a SOA approach
  - If software applications are built using SOA standards, then any business processes rendered as a collection of services can be combined to create an enterprise business process solution.



When to use SOA

- If your enterprise includes multiple stovepipes and legacy systems that have no means of communicating with each other. (If these systems happen to be based upon web services technology, then interoperability is possible without additional middleware).
- If there is no economic value in building or buying an alternative solution.
- If you want to decrease your dependency on vendor-specific software products and still use multiple software service components.
- If you are trying to maximize your ability to create flexible business processes and support cross-functional enterprise views.

When to use SOA

- Business Processes vary, hence they need to be handled differently:
  - Transactional Processes – Not good SOA candidates because large transaction volumes are burdensome to technical infrastructure

    Example: Processing payroll garnishments
  - Verification Processes – Good SOA Candidates

    Example: Verifying vendor unique ID codes
  - Management Processes – Good SOA Candidates

    Example: Updating security profiles

Current State of SOA

- Three web services standards form the foundation of SOA development:
  - SOAP – An XML-based specification for defining how Web services exchange messages.
  - WSDL – An XML-based taxonomy for defining the characteristics and functionality of a web service.
  - UDDI – Provides a central repository which lists web services that are available, akin to an address book.
- These standards continue to mature and have been used inconsistently by vendors.
- The DoD continues to review these standards due to security and authorization deficiencies which are currently inconsistent with GIG requirements.

SOA Standards in the DoD

- **DISR**: Department of Defense Information Technology Standards Registry. DISR contains all of the approved and active technical standards to be used by DoD components. It replaces the Joint Technical Architecture (JTA).
  - Standards have 1 of 3 states:
    - Emerging
    - Mandated
    - Inactive/Retired
- Some commercial SOA standards have not been included in the DISR.
  - If project teams require the use of SOA standards not yet in the DISR, a waiver must be obtained from DISR to implement new standards.

Standard	DISR Status
SOAP	Mandated
WSDL	Mandated
UDDI	Mandated
WSS_Core	Mandated
WSRP	Mandated
JSR168	Mandated
WebDav	Mandated
WS-BPEL	None
WS-Policy	None

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SAP and Oracle Strategies

Dr. Ray Sommer – Enterprise Integration, Inc.

The Paths to SOA

- There is more than one way to move your organization toward a Service-Oriented Architecture.
  - Implementing a SOA-ready ERP System and exploiting its SOA engine to extend business processes enterprise-wide.
  - Implementing a “Middleware” solution and utilizing its ability to compose services to orchestrate less compatible applications.

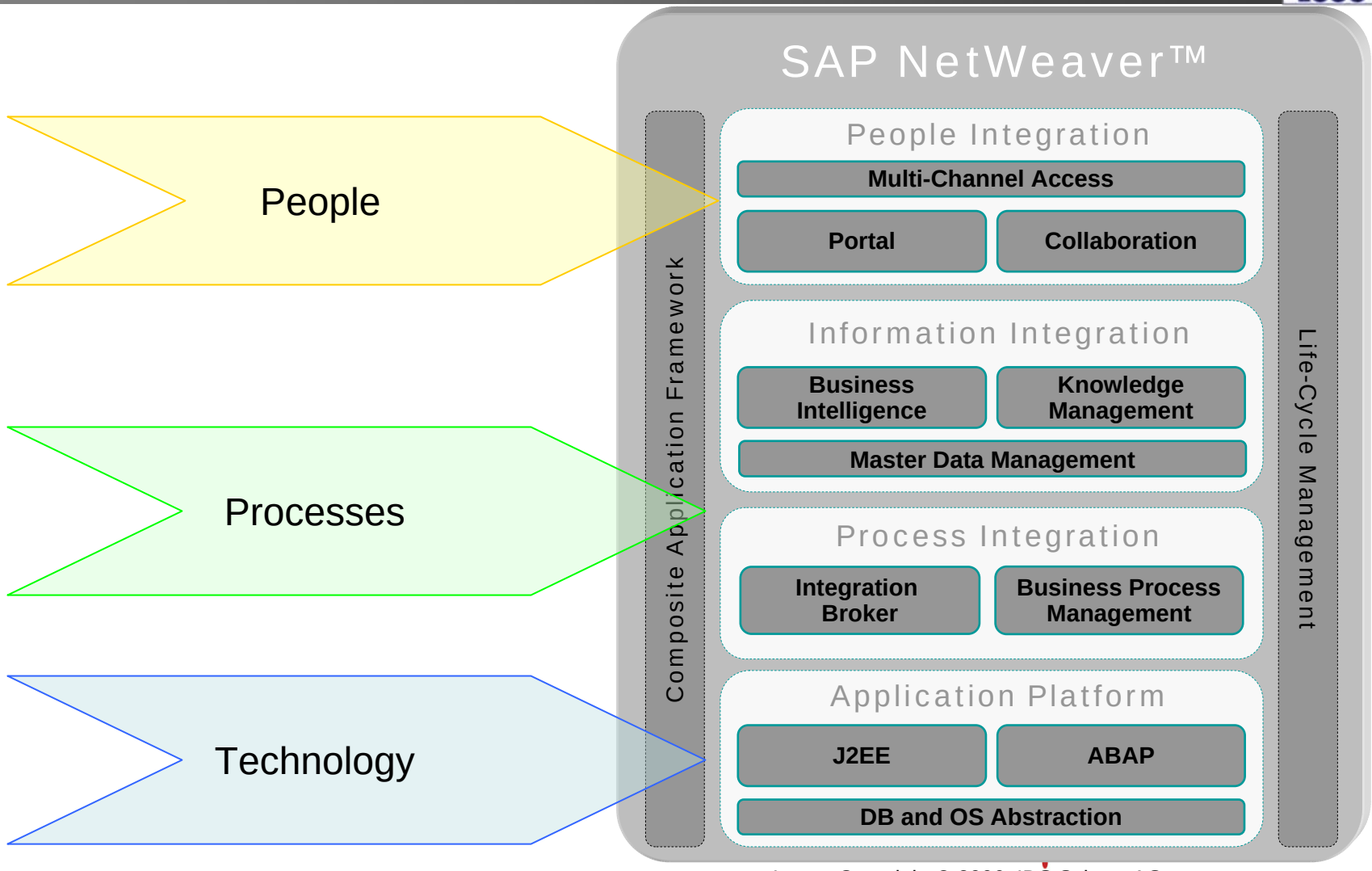
Neither of these approaches is necessarily “better” – it depends on what your objectives are.

The ERP Path to SOA

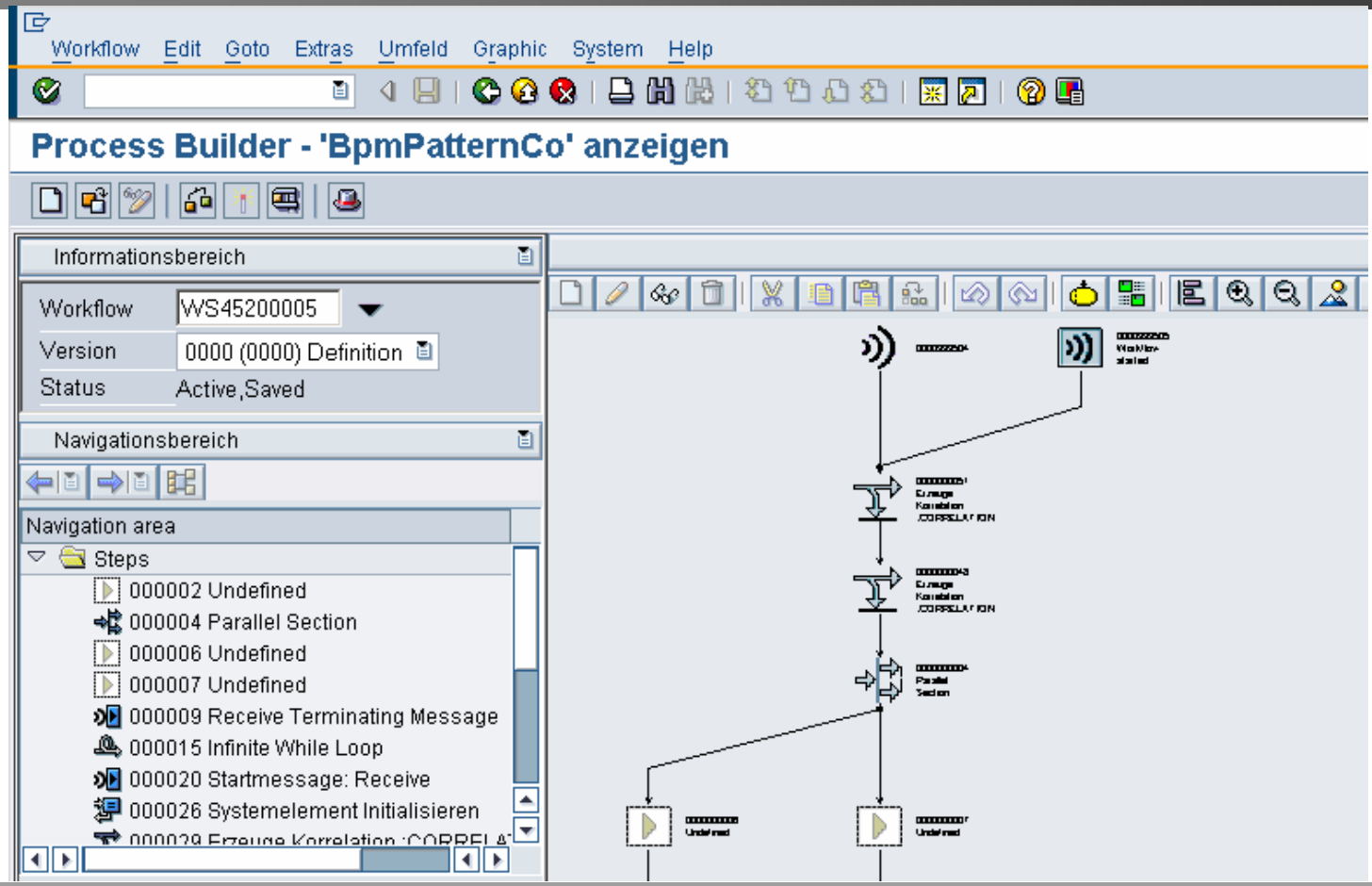
- The market-leading ERP vendors have incorporated SOA-enabling technology into their products.

ERP Vendor	SOA-enabling Technology
SAP	NetWeaver
ORACLE	Fusion

SAP's NetWeaver Technology



Process Orchestration in SAP's NetWeaver



Enterprise-wide processes can be orchestrated within NetWeaver's "Composite Application Framework."

Master Data Management

- SAP's Master Data Management is a component of the NetWeaver technology that promises to provide a method to manage data quality from within SAP.

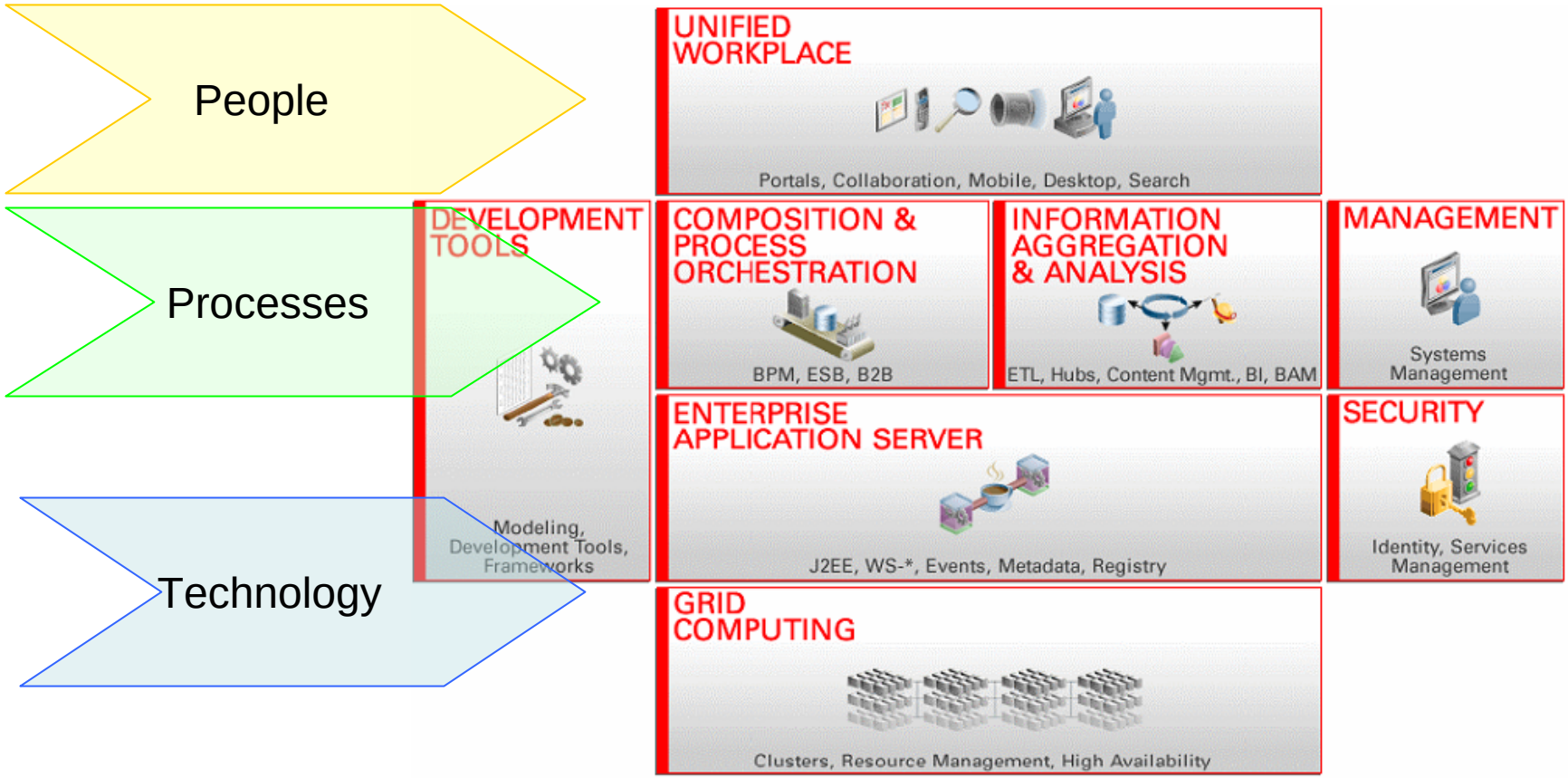
- It advertises the following capabilities:
  - Technology – ETL (Extract Transform Load)
    - Removes data from one system and puts them into another
    - Tracking data changes and distributing to subscribing systems
    - Keeping historical audit trail
  - Business Process – Workflow
    - Managing new master data creation requests
    - Ensuring Data Management roles are managed (e.g. who is allowed to change what data objects)
  - Managing Data Changes and Exceptions – Portal / GUI
    - Legacy systems may need MDM GUI to manage manual changes

The ERP Path to SOA

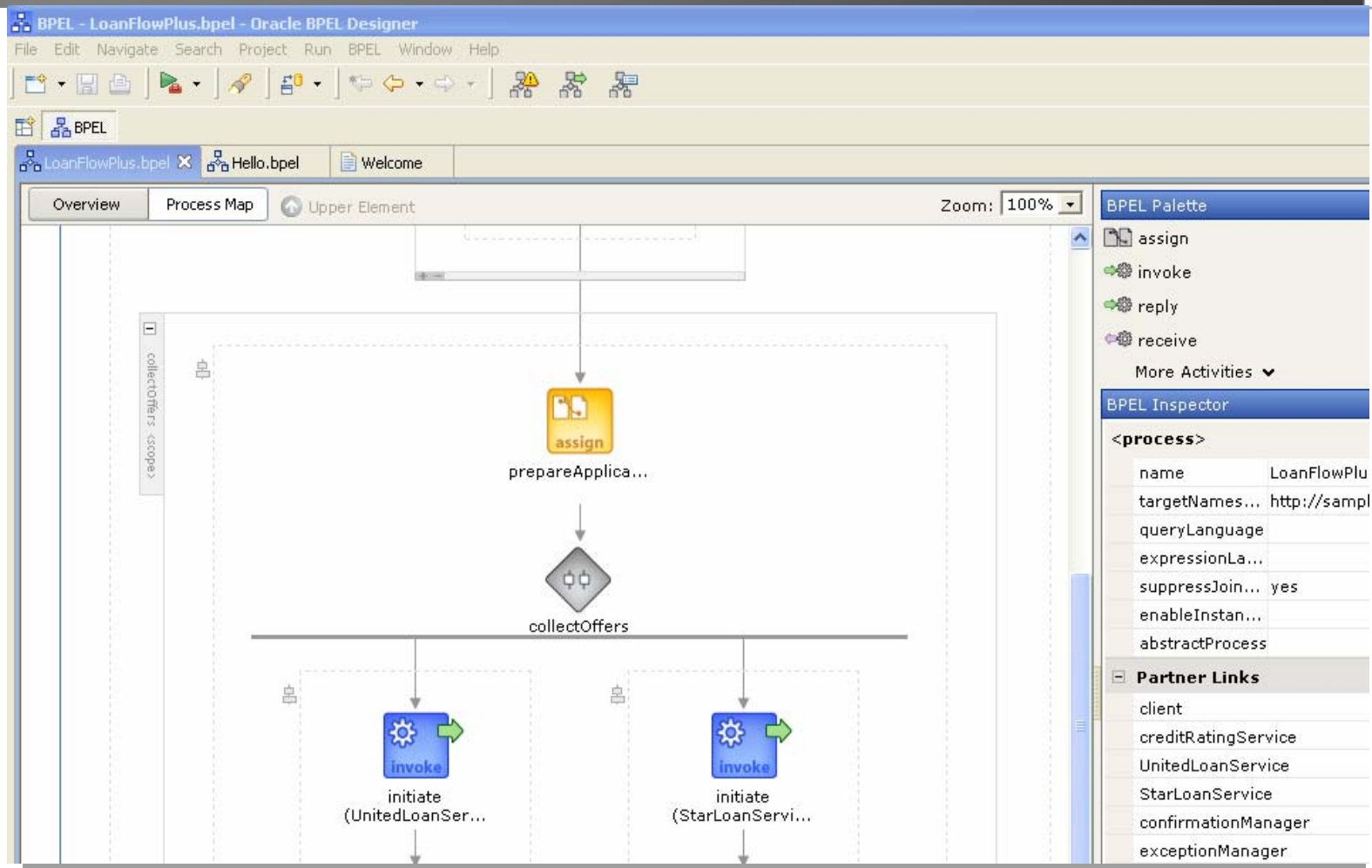
- The market-leading ERP vendors have incorporated SOA-enabling technology into their products.

ERP Vendor	SOA-enabling Technology
SAP	NetWeaver
ORACLE	Fusion

Oracle's Fusion Technology

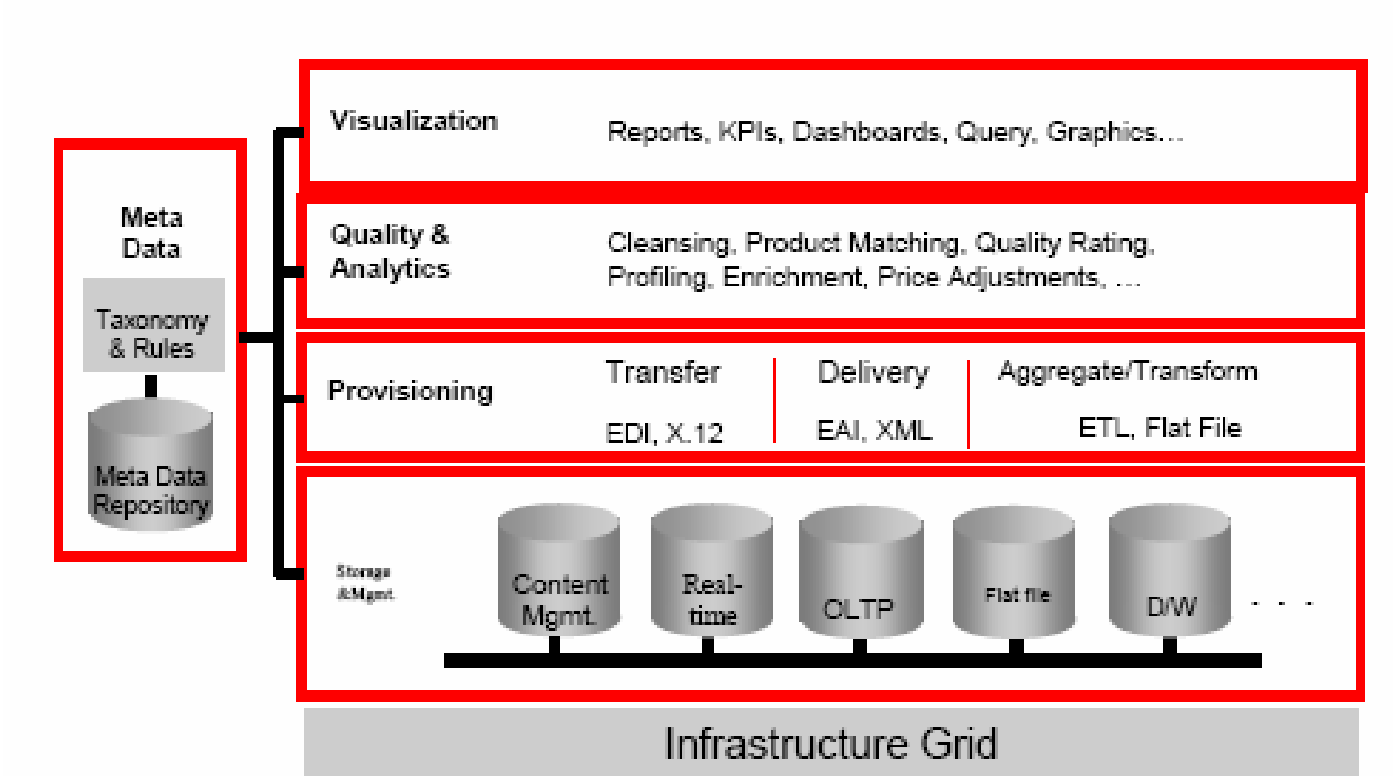


Process Orchestration in Oracle's Fusion



Enterprise-wide processes can be orchestrated within Oracle's Fusion.

Oracle's Enterprise Information Architecture



Limitations of ERP as SOA Approach

- EPR products such as SAP's Netweaver & Oracle's Fusion do not contain any full enterprise service repository content for other applications that may exist in an organization.

- Middleware solutions may be required to enable non-web standard-compliant legacy applications to provide and request "services".

Currently ERPs vendors supplement tightly integrated end-to-end business processes with limited SOA functionality.

The Middleware Path to SOA

- Middleware vendors offer suites of technology to create business process interoperability between non-web compliant systems.

Middleware Vendor	SOA-enabling Technology
bea Think liquid.™	AquaLogic
IBM®	WebSphere

Limitations of Middleware as a SOA Approach

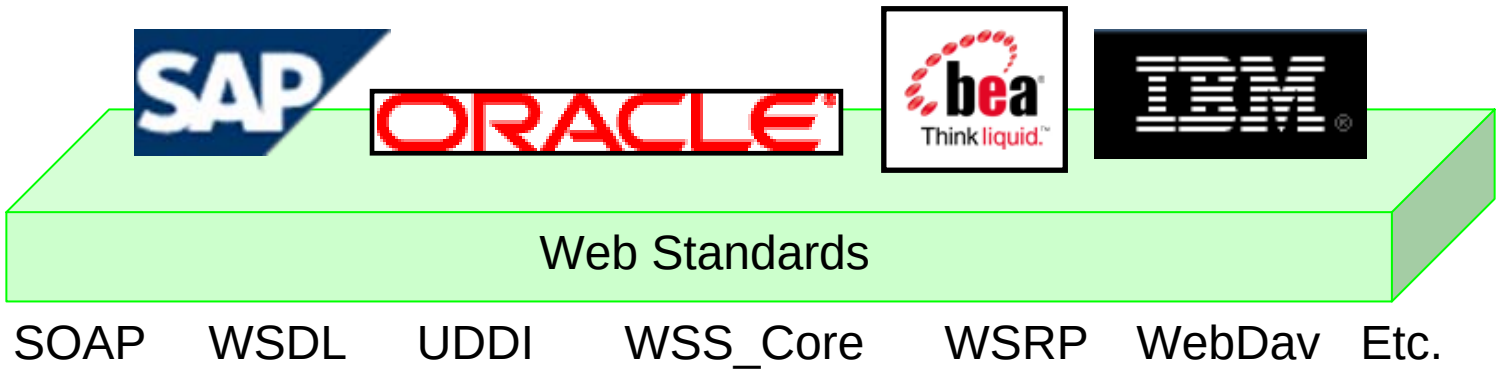
- Middleware vendors' products such as BEA's Aqualogic & IBM's WebSphere do not contain the intrinsic business process logic found in ERP software applications. Therefore, they can only support the integration of end-to-end processes

- Middleware is best suited for integration of processes which validate information not transactional information or processing large volumes of data

Middleware is very robust at composing your SOA, but it does not contain native business processes, so it can not get you all the way there.

Web Standards Enable SOA

- All of these SOA approaches are made possible because the products comply with the published web-service standards.



In order to orchestrate an existing legacy application into your SOA it must be either already web-service compliant or you must develop the "encapsulation" yourself.

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Enterprise Solutions
Success Stories and Lessons Learned

Commercial Success Stories/Lessons Learned

Guest Speaker – Adolph Allesch, Capgemini

Top 10 Reasons ERP Implementations Succeed

1. **Governance** – A structured program enables senior leadership visibility and accountability.
2. **Scope** – An end-to-end Enterprise Process view of business processes leads to a more accurate understanding of the scope of work required to meet organizational requirements.
3. **Change Management** – Sufficient investment in CM activities, -- the people side of change.
4. **Skills** – Implementation team is provided with adequate training on ERP software, project software tools and the System Integrator ERP Methodology.
5. **Decision Making** – Rapid decision-making instead of consensus decision-making.
6. **Communication** – Frequent communication targeted to all levels.
7. **Solution Architecture** – Creation of an COTS/ERP solution architecture and use of appropriate implementation methodology.
8. **Training** – Sufficient investment in project team and user training and executive education.
9. **Culture** – Designated personnel act as change agents who understand the cultural changes which will occur due to the ERP implementation.
10. **Leadership** – Project leadership continuity and consistent feedback.

Technology doesn't deliver transformation – People do…

ERP Governance

- **Governance** – A structured program enables senior leadership visibility and accountability

- Best Practice
  - Union Carbide
  - Stage Gates (entrance and exit gates)
  - Two in Box (client and consultant)
  - Automation of Work Effort / Reporting (workflow generated Earned Value Analysis)
  - Risk Management (FMECA=Fail Modes Effect and Criticality Analysis)

ERP Scope

- **Scope** – An end-to-end Enterprise Process view of business processes leads to a more accurate understanding of the scope of work required to meet organizational requirements.

- Best Practice
  - Florida Power and Light
  - Scope Court
  - Business process leadership
    - Milestone signoffs
    - Extended focus groups
    - Joint Business and Technical Leaders
    - Competency Center involvement

ERP Change Management / Communications

- **Change Management** – Sufficient investment in CM activities, -- the people side of change.
- **Communication** – Frequent communication targeted to all levels.

ExxonMobil

- Best Practice
  - Exxon Mobil
  - Multi threaded approach
    - Leadership Readiness>Communications>Organizational Redesign>End User Training
  - Program Team Change Management Initiatives
  - Communications Media Calendars

ERP Skills

- **Skills** – Implementation team is provided with adequate training on ERP software, project software tools and the System Integrator ERP Methodology

- Best Practice
  - GE Silicone
  - Two in the box (Client and Consultant)
  - In house training environments
  - In house ERP academy
  - Tools Certification
  - PMO Ownership / Deployment

ERP Decision Making

- **Decision Making** – Rapid decision-making instead of consensus decision-making

- Best Practice
  - Flour Daniel
  - Integrated Decision Management and Issue Database
  - 24 hr issues turnaround
  - Thread Teams
  - Team Empowerment

ERP Solution Architecture

- **Solution Architecture** – Creation of an COTS/ERP solution architecture and use of appropriate implementation methodology.

- Best Practice
  - ☐ Raytheon
  - ☐ CIO Council
    - Technical Governance Committee
  - ☐ Enterprise Architects
  - ☐ Reference Architecture / Corporate Standards

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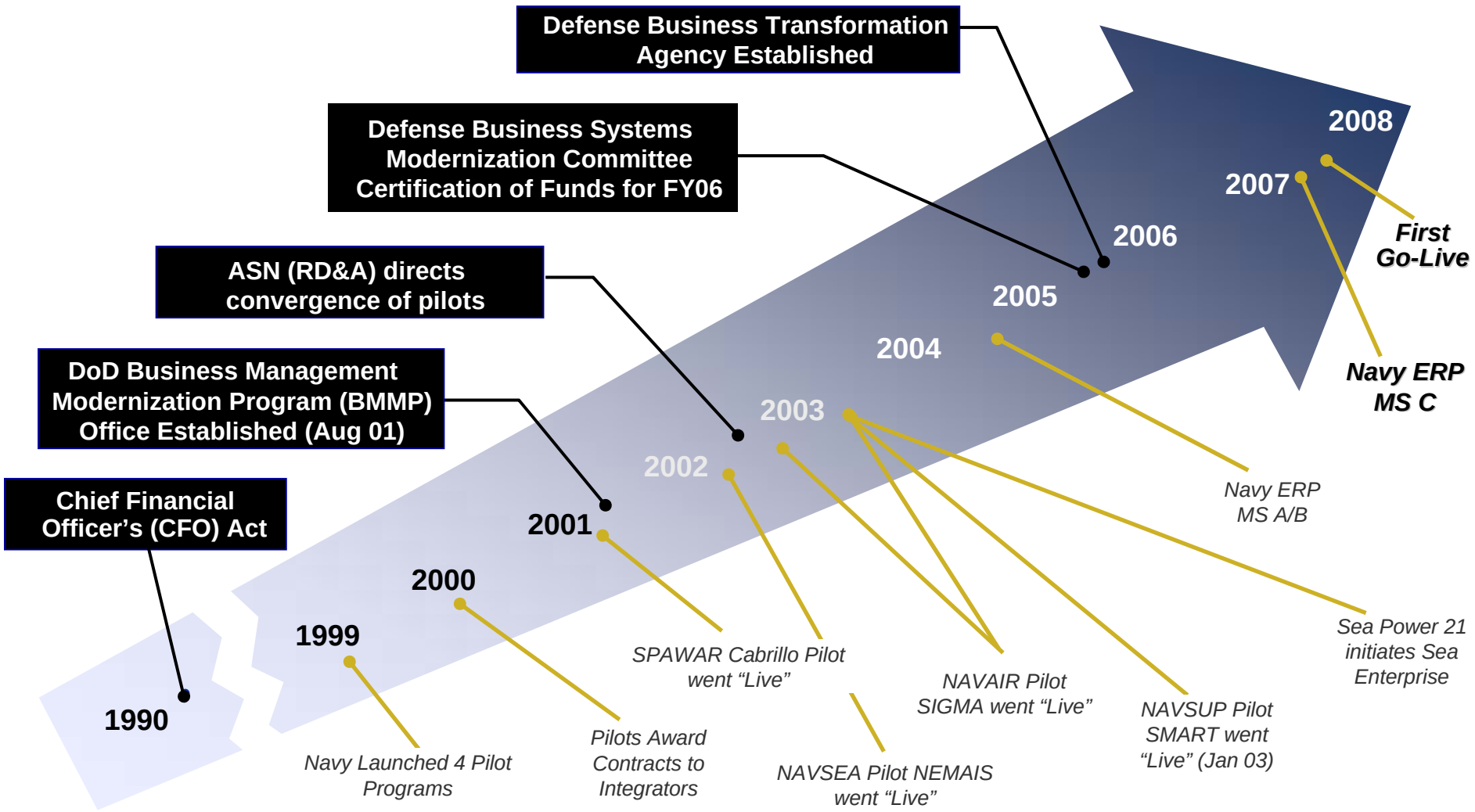
Navy Converge Success Stories/Lessons Learned

Guest Speaker – Ron Rosenthal

Program Director Navy Converge Program

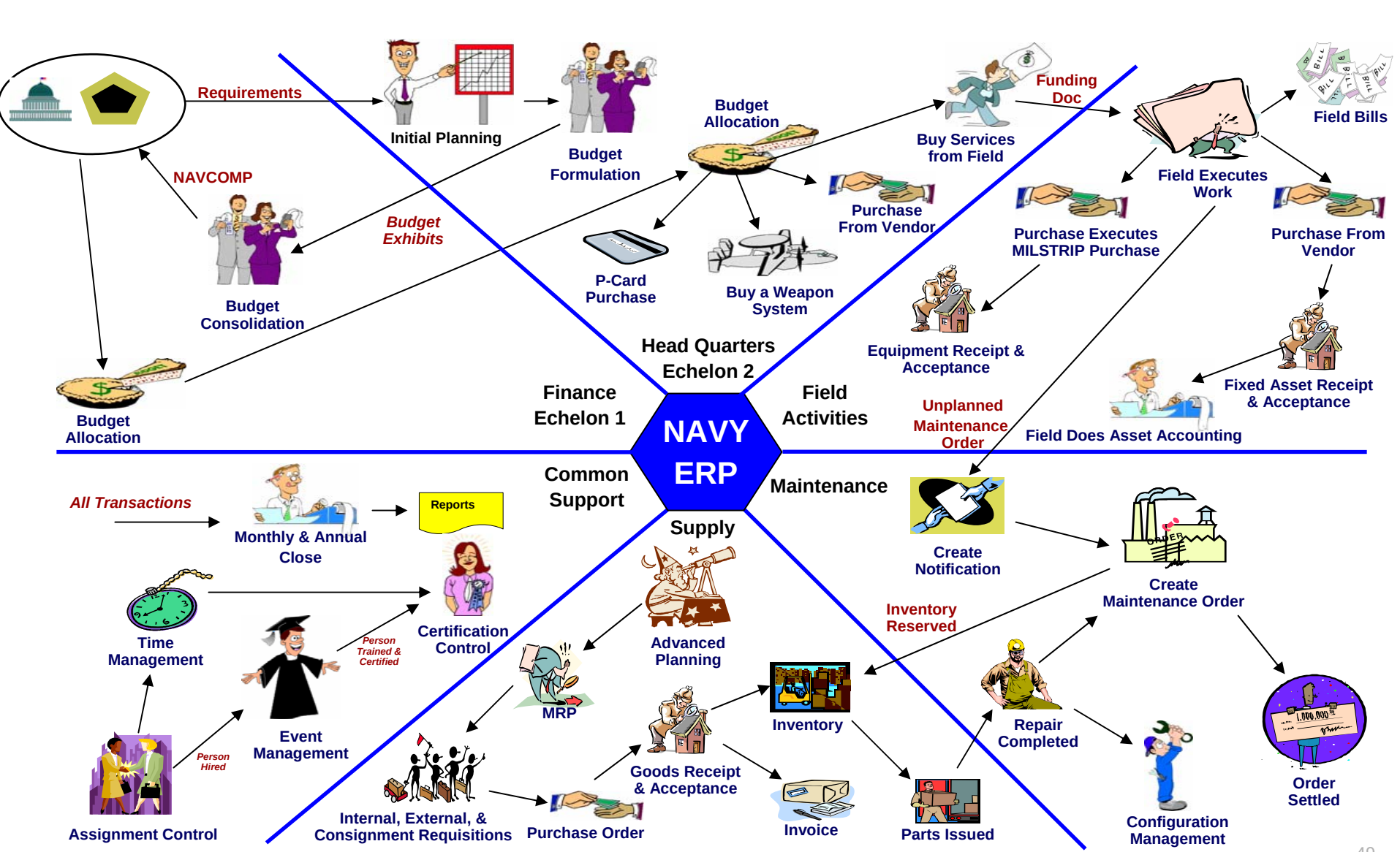
Navy ERP Background



DoD Business Environment Driving Navy to ERP

Navy ERP Business Process Overview

NAVY ERP PROGRAM



Lessons Learned:
Building Enterprise Governance

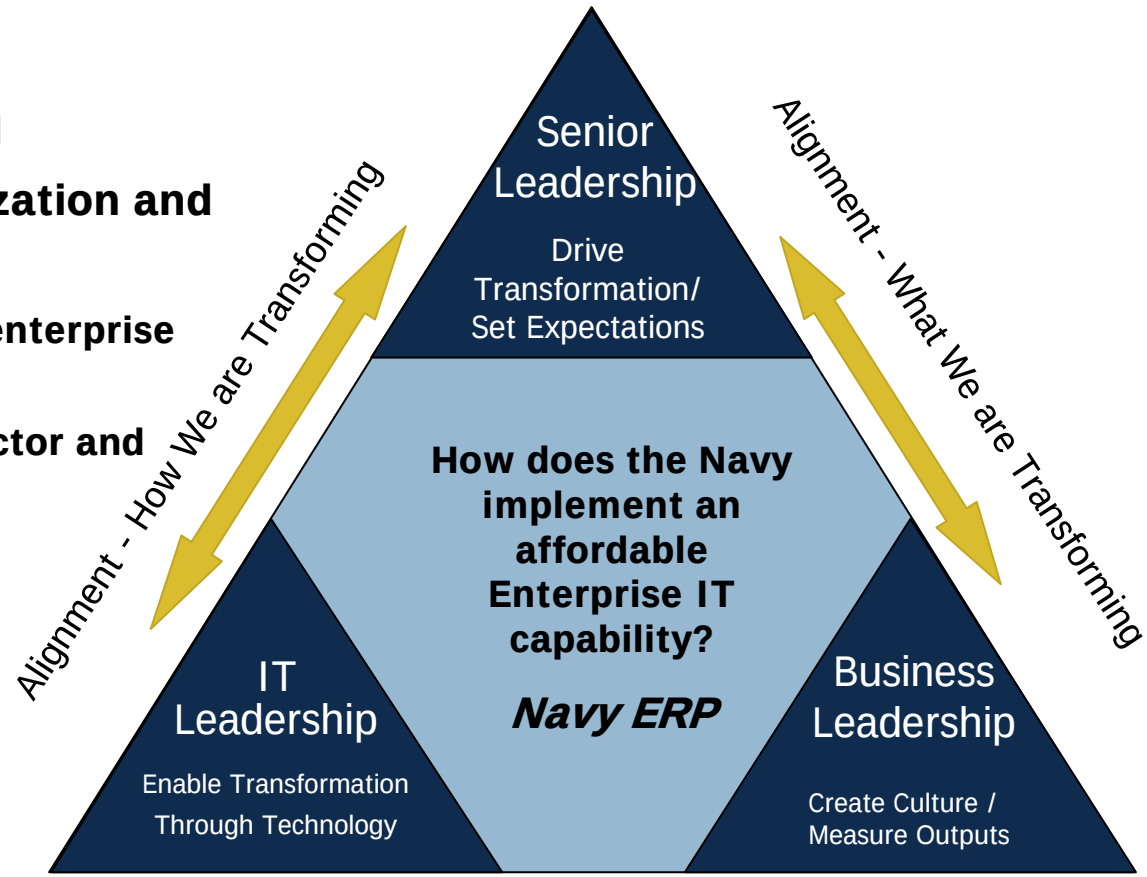
Senior leadership must drive transformation
- Set expectations and promote enterprise thinking
- Drive enterprise alignment and communicate why

Leaders create a culture of continuous improvement
- Define and measure outputs
- Invite innovation
- Ensure savings are harvested

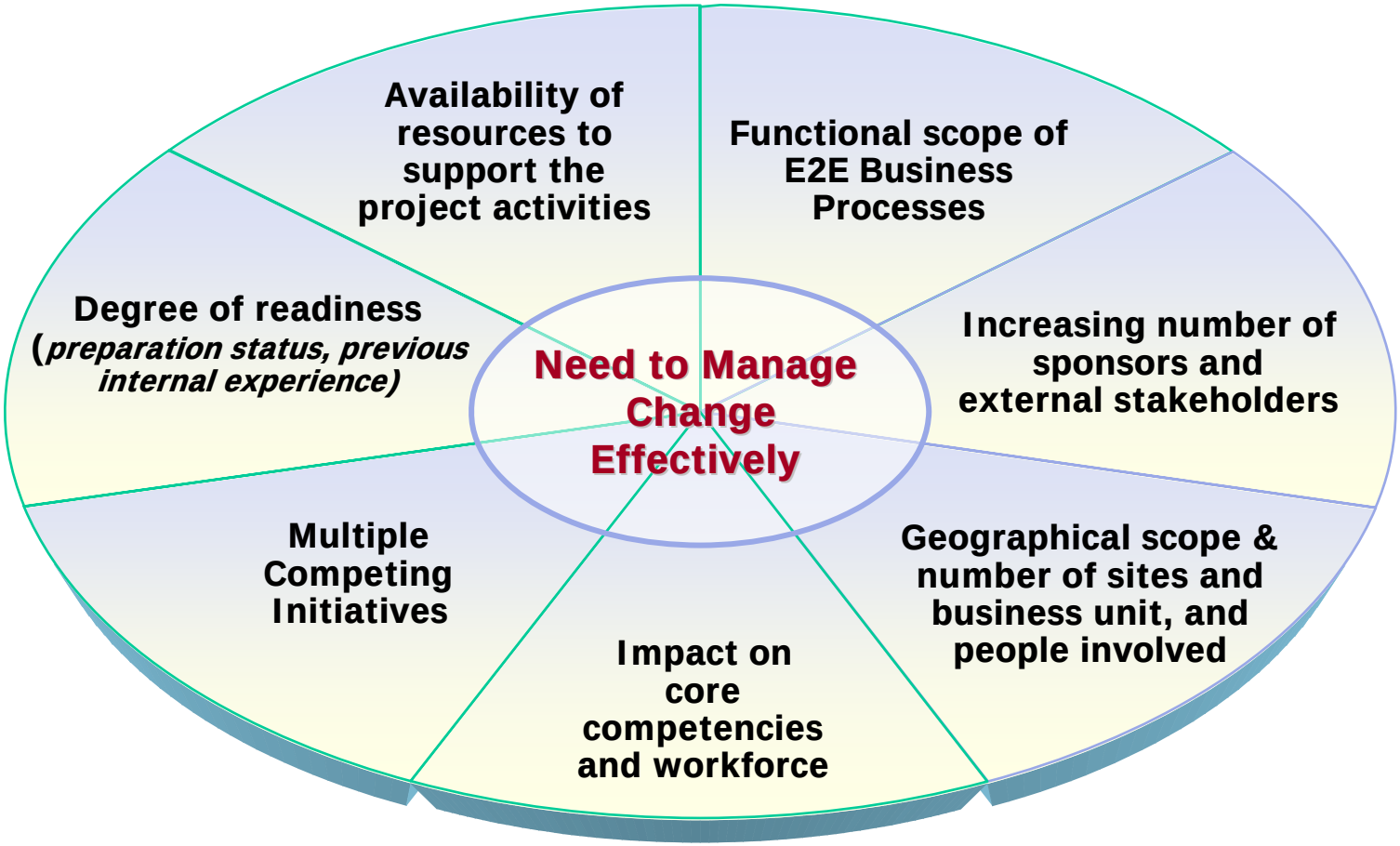
Enterprise alignment of organization and processes
- Reduce redundancy
- Extend collaboration across enterprise

Embrace best practice
- Leverage both the private sector and government
- Embrace best practices

Business acumen must be developed at all levels



Lessons Learned:
Change Management Strategy



The scope and complexity of Navy ERP requires a well defined change management strategy and supporting activities

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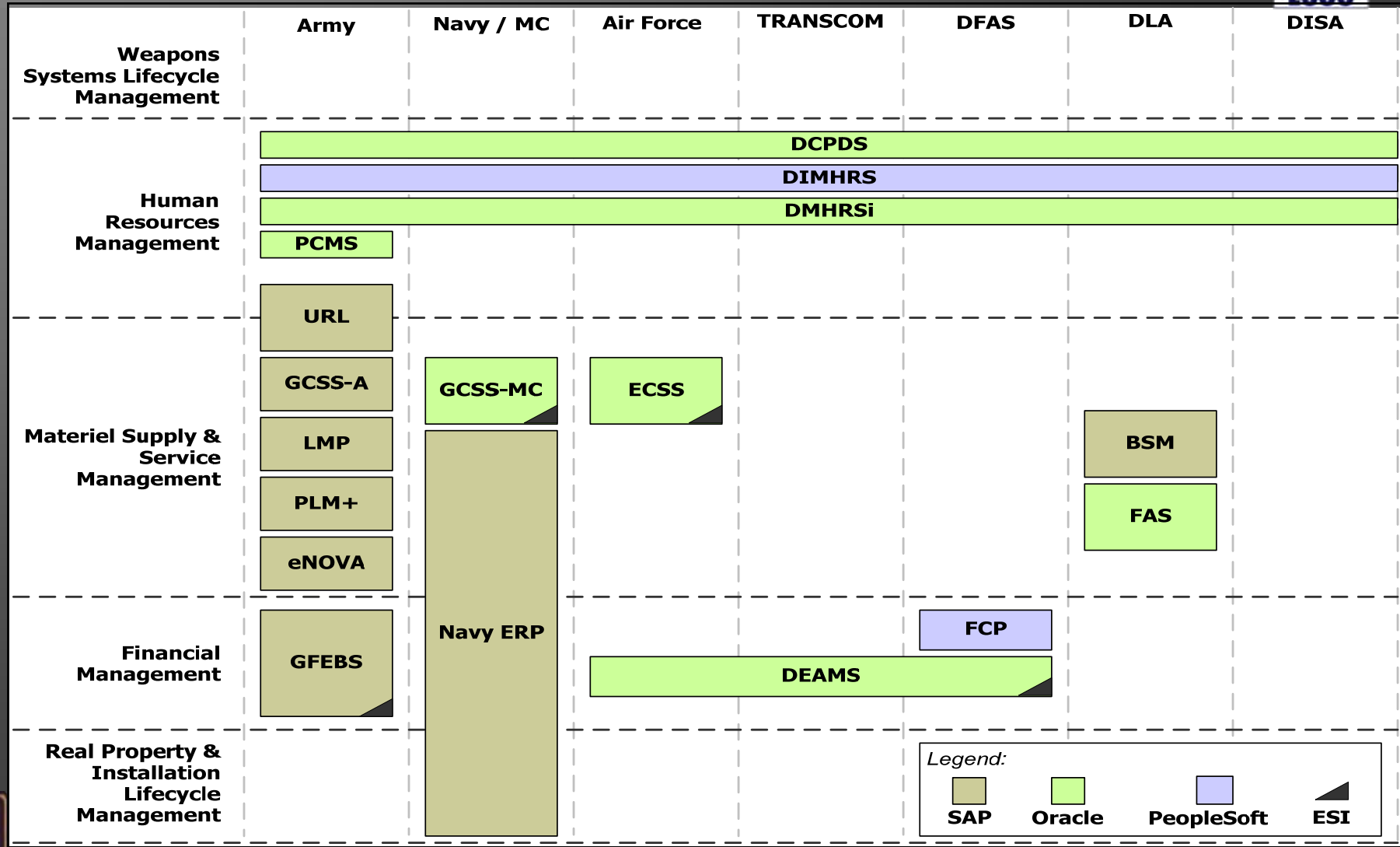
Enterprise Solutions
Success Stories and Lessons Learned

DoD and Army ERP Implementations

Guest Speaker – Kevin Carroll PEO EIS

DOD / Army ERP Programs



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Enterprise Solutions
Success Stories and Lessons Learned

Discussion: Next Steps

Mr. Gary Winkler - GA&CKO

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Wrap Up / Q&A

Mr. Chip Raymond - SEC - Belvoir

Next ESCC Education Sessions

- This course will be repeated on 26 & 27 Jun, at the Packard Conference Center, Fort Belvoir, for any who missed this session, or any modules of this session.

- The ESCC will be hosting three Action Officer level (O-6/GS-15) courses over the coming months that will contain additional detail relevant to and in support of PMs, PEOs and other acquisition and IT professionals.

- The courses and dates are listed below:
  - **Federated Architecture Workshop**
    Date: 16 Jun 06
    Location: TBD
  - **Data Migration Workshop**
    Date: 21 Jul 06
    Location: TBD
  - **Acquisition and Contracting Issues**
    Date: 18 Aug 06
    Location: TBD

- Additional details will be provided.

Learning Objectives

- Understand the current state and trends of the ERP Market
- Understand changing technology for Enterprise Solutions
  - Service-Oriented Architecture
  - Oracle Fusion
  - SAP NetWeaver
- Provide Success Stories and Lessons Learned for Public and Private Sector ERP implementations
- Open discussion of DoD and Army strategies for ERP implementations